JX LNG Canada

Summit Lake PG LNG Project

Liquified Natural Gas Facility

Initial Project Description English Summary

(BCEAA 2018, IAA 2019)

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Abbreviations

ALC	Agricultural Land Commission
BC MoEC	BC Ministry of Environment and Climate Change
BC MoTI	BC Ministry of Transportation and Infrastructure
BC MoF	BC Ministry of Forests
BC MoLWR	BC Ministry of Land, Water and Resource Stewardship
BC	British Columbia
BCEAA	British Columbia Environmental Assessment Act
BCEAO	BC Environmental Assessment Office
BCER	British Columbia Energy Regulator
BC Hydro	British Columbia Hydro and Power Authority
CAD	Consultative Areas Database
CER	Canadian Energy Regulator
CN	Canadian National Railway
CNG	Compressed Natural Gas
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
DFO	Fisheries and Oceans Canada
EA	Environmental Assessment
ECCC	Environment and Climate Change Canada
EEP	Early Engagement Plan
FEED	Front End Engineering and Design
GHG	Greenhouse Gas
IA	Impact Assessment
IAA	Impact Assessment Act
IAAC	Impact Assessment Agency of Canada
IPD	Initial Project Description
ISO	International Organization for Standardization
JX LNG	JX LNG Canada Ltd.

km	kilometers
LNG	liquified natural gas
LTN	Lheidli T'enneh First Nation
MLIB	McLeod Lake Indian Band
mm	millimeters
mmscfd	million standard cubic feet per day
MRC	Mixed Refrigerant
MTPA	million tons per annum
MW	megawatt
Nak'azdli	Nak'azdli Whut'en First Nation
Nav Can	Transport Canada's Navigation Canada
Nazko	Nazko First Nation
NHA	Northern Health Authority
NPS	Nominal Pipe Size
PJ	Petajoules
PM	particulate matter
PRPA	Prince Rupert Port Authority
RDFFG	Regional District of Fraser Fort George
RIELP	Ridley Island Export Logistics Platform Project
SARA	Species at Risk Act
Pre-FEED	Preliminary Front-End Engineering and Design
Project	Summit Lake PG LNG Project
TC NGTL	TransCanada Nova Gas Transmission Ltd.
TRS	Total Reduced Sulphur
TSBC	Technical Safety BC
WCSB	Western Canadian Sedimentary Basin
Westcoast Pipeline	Enbridge Westcoast Transmission System

Executive Summary

JX LNG Canada Ltd. (JX LNG) is proposing to develop a liquified natural gas (LNG) facility in the Caribou Region of British Columbia called the Summit Lake PG LNG Project (referred as the "Project"). The proponent, JX LNG Canada Ltd. (JX LNG) is an Alberta-based subsidiary of Changchun Jixing New Energy Ltd. (Jixing). Jixing is a prominent player in the LNG and compressed natural gas (CNG) sector within northeastern China. JX LNG is newly established in British Columbia and is dedicated to advancing the development of LNG and renewable energy within the country. The contact information for JX LNG can be found below:

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Location

The Project will be located on undisturbed land, approximately 30 kilometers (km) north of Prince George at the Hart North Industrial Site. The Project site is zoned as Rural 2 and Rural 3 under the Regional District of Fraser Fort George (RDFFG) Zoning Bylaw 2892, 2014 and designated for Heavy Industrial Use under the RDFFG Official Community Plan for the Crooked River – Parsnip Area. The site is located approximately 20 km from Lheidli-T'enneh First Nation Community and falls within the traditional territory of the Lheidli-T'enneh First Nation. The Project is preliminarily projected to utilize approximately 250 hectares of land. The Project site is approximately 7 km from the Giscome Portage Trail Protected Area. The Site of the project is not on Federal lands nor is it within proximity to any known federal lands. Coordinates of the approximate center of the Project are 54.185, -122.63, and the Legal description of the Land is NTS A-021-J/093-J-02.

Estimates and Purpose

The Project will be developed in two identical phases. Phase 1 will produce up to 1.35 million tonnes per annum (MTPA) and Phase 2 will produce an additional 1.35 MTPA for a total of 2.70 MTPA of LNG. Commercial operations for Phase 1 are expected to commence in 2028. As part of the Project, an approximately 2-kilometre pipeline to deliver natural gas to the facility from the existing Enbridge Westcoast Pipeline main transmission will be built, as well as an approximately 6-kilomter powerline to connect the Project to British Columbia Hydro and Power Authority (BC Hydro) green power at the Salmon Valley substation.

At full build out the Project will process approximately 10,060 e^3m^3/d (355 million standard cubic feet per day (mmscfd)) of pipeline grade natural gas to produce 2.70 MTPA of LNG. The Project is expected to operate for 30 years. JX LNG is designing the Project to be environmentally best in class with no direct impacts to water or aquatic life and net-zero in terms of greenhouse gas (GHG) emissions. This will be achieved through connection to the BC Hydro renewable power grid, in combination with an operating culture focussed on minimizing environmental impacts, new technologies and design elements intended to reduce GHG emissions, a detailed monitoring and measurement system, and potential consideration of recognized carbon offsets or carbon capture and sequestration measures. This process will be in liaison with the 2030 Emissions Reduction Plan under the Bill 12 Canadian Net-Zero Emissions Accountability Act.

Across the globe, countries are looking to reduce greenhouse gas (GHG) emissions and are seeking cleaner energy options to address global climate change. LNG produces significantly less GHG emissions and other pollutants than other fossil fuel options. The construction of the Project will enable the export of LNG to meet growing demand across the globe. In addition, it will create direct and indirect socio-economic benefits to the people in British Columbia (BC) and assist in meeting federal and provincial objectives to address global climate change due to GHG emissions.

Scope/Process Overview

Subject to the negotiation of certain agreements, JX LNG intends to receive feed gas from the existing Enbridge Westcoast Transmission System (Westcoast Pipeline) which is interlinked with the Westcoast Station 2 Gas Hub and TransCanada Nova Gas Transmission Ltd. (TC NGTL) system. Initial conversations with Enbridge indicate that, in order to align with the Phase 1 pipeline capacity of the current Westcoast Pipeline, a pipeline loop of under 40 km could be required upstream of Compressor Station 4A within the existing Westcoast Pipeline system. The new Enbridge pipeline loop will be done as an independent project from the JX LNG Project. JX LNG has engaged in discussions with Enbridge regarding the capacity of the Westcoast Pipeline that is available for the Project. Based on the initial hydraulics assessment conducted by Enbridge, the additional looping to their existing Westcoast Pipeline is expected to be under 40 km in length. The exact dimensions of the loop will be confirmed in an upcoming and more comprehensive hydraulics study. Pipeline expansion for Phase-2 will be done after FID of Phase-1. A new meter station take-off point will be installed south of Compressor Station 4A by Enbridge, and approximately 508 millimeter (mm) (Nominal Pipe Size (NPS) 20) diameter and minimum 2 km in length pipeline will be installed either by JX LNG or Enbridge. The exact pipeline routing will be determined through consultation with landowners, indigenous groups and Enbridge.

The feed gas will be purchased from Westcoast Station 2 Hub gas market. JX LNG plans to initiate discussions with various gas producers in this region later.

A high-level summary of the proposed facility equipment is as follows:

a) Natural gas receiving and treatment units.

b) Natural gas liquefaction train(s) powered by electricity.
c) Flare system.
d) LNG storage tanks with an initial total storage capacity of 100,000 m^3 for Phase 1; and a cumulative total storage capacity of 200,000 m^3 in Phase 2.
e) Storage vessels and tanks for products including natural gas liquids removed from the inlet gas, refrigerants for the liquefaction trains, fuel for the backup generators, process waste streams for offsite disposal, and other products to be used for operation and maintenance of the LNG facility.
f) LNG loading arms.
g) Rail spurs, LNG container loading and unloading facilities.
h) Water storage for fire water, amine makeup and other ancillary purposes.
i) Wastewater collection and treatment systems for stormwater and domestic wastewater.
j) Control room and staff facilities.
k) Emergency shutdown system.
l) Emergency backup power generation system.
m) Electrical transformers; and electrical utilities interface connection to infrastructure.
n) A helium recovery system extracting helium from the tail gas if economically viable.

The pipeline will deliver natural gas to the facility where it will enter the facility through the inlet separator for free liquids or contaminants to be removed. Next, the gas will go through a pre-treatment system consisting of an amine solvent unit to remove CO_2 and any trace sulfur gases. The treated gas is then dehydrated in molecular sieve dehydration units. The removed water from this stage will be stored on-site in produced water tanks for truck out or other disposal methods. The final step in pre-treatment is a mercury absorption bed which prevents damage to the downstream aluminum components. Once CO_2, water and other contaminants are removed, the gas will go through a liquefaction process that will chill the natural gas to approximately -162 °C into LNG. The preliminary LNG process selected is a mixed refrigerant (MRC) cold box based three stage cooling system. It consists of a precooling step, where heavy hydrocarbons that will freeze in later stages are removed. These hydrocarbons will be stored in on-site bullets for truck-out or further processing. Following the precooling stage is the liquefaction stage where the gas is liquified. Finally, there is a subcooling stage where the now liquid gas or LNG is reduced in pressure and sent to onsite storage. The LNG product will be stored in International Organization for Standardization (ISO) shipping containers which means that it is easily transported.

The LNG product within the ISO containers will be loaded on to rail cars on the Project lease, where it will be transported to the BC west coast and loaded on to cargo ships for delivery overseas to international consumers of LNG.

JX LNG is proposing to lease land from the Prince Rupert Port Authority within their Ridley Island Export Logistics Platform (RIELP) project. From the RIELP the ISO containers will be transported via rail to the Fairview Terminal for loading onto dedicated ships.

It is expected that the LNG Product stored near the cargo ship port would not exceed the LNG storage capacity limit of 136,000 m^3 to trigger an IA under the IAA nor a BC environmental assessment (EA) under the BCEAA. For these reasons this portion of the Project is considered out of boundaries for the EA and IA process.

The design of the proposed Project is ongoing and will be finalized during the pre-front-end engineering design (pre-FEED) and front-end engineering design (FEED) phases.

Utilities for the Project consist of green electrical power, and a small amount of trucked in process makeup water and chemicals. Power for the Project will be supplied from the BC Hydro with an approximately 6 km new powerline south from the proposed Project site to the existing Salmon Valley substation. Cooling will be accomplished primarily from aerial coolers.

The makeup water for the amine unit will be trucked in with the intent to utilize technologies that require a small amount of water, to minimize the impact.

The boundaries of the Project for the purposes of the IA and EA include the pipeline from the Enbridge meter station to the Project, the Project itself, the powerline from the Salmon Velley substation to the Project and the rail loading facilities. There will be a need for new rail track connecting the site to the Canadian National (CN) main line. Once on the rail cars the product will be conveyed to the west coast of BC, and shipped overseas, utilizing existing infrastructure.

Schedule

Based on the information available at the time of writing, Phase 1 of the Project is scheduled to begin construction in Q1 2026 with a commission date of Q3 2028. The construction schedule for Phase 2 will immediately follow Phase 1 commissioning. The Project is set to operate from 2029 till 2057. From 2057 till 2058 will be the decommissioning and closure phases of the Project as currently planned.

Construction of Phase 1 of the Project will commence after all regulatory requirements are satisfied. JX LNG will work closely with regulators and seek feedback on the proposed schedule throughout the assessment process.

Regulatory & Environmental Permits

The Project is reviewable under both the British Columbia Environmental Assessment Act (BCEAA) and the federal Impact Assessment Act (IAA). Both acts emphasize the importance of early engagement of First Nations, stakeholders, and impacted communities to encourage the exchange of information early in the Project development.

The filing of an Initial Project Description (IPD) and Early Engagement Plan (EEP) is the first step in both the provincial and federal processes. JX LNG is introducing the Project to First Nations, government agencies, public stakeholders and regulatory officials prior to submission of the IPD and EEP and facilitate

conversations regarding potential effects on impacted communities and incorporate feedback into these documents.

As the Project triggers federal and provincial processes, it is anticipated that the BC Environmental Assessment Office (BCEAO) will request a substitution of the federal Impact Assessment (IA) process following Readiness Decision from the BCEAO. The Project schedule assumes that the Project is granted substitution.

The Project is subject to a Ministerial decision under the IAA and BCEAA as it exceeds the following triggers for the assessment:

- *"a new facility for the liquefaction, storage, or regasification of liquefied natural gas, with a liquefied natural gas processing capacity of 3 000 t/day or more or a liquefied natural gas storage capacity of 136 000 m^3 or more"* - Part 37 (d), Oil, Gas and Other Fossil Fuels, Schedule (Section 2) Physical Activities, Physical Activities Regulations – IAA
- *"a new liquified natural gas facility with the design capacity to store >= 136,000 m^3 of liquified natural gas"* - Part 4, Table 8, Project Category 1 Energy Storage Facility, Column 2, Criteria (1)(a) Reviewable Projects Regulation - BCEAA

The trigger points are at the LNG Projects – Volume Produced and Storage: The Project will have a production capacity of 2.70 MTPA which is equivalent to approximately 7,400 tonnes/day, and have a storage capacity of approximately 200,000 m^3, exceeding the threshold of 136,000 m^3.

An additional trigger point for the IAA is in regard to the Rail Yard – Area: The Project's rail yard area is expected to be approximately 155 ha, exceeding the threshold of 50 ha.

A variety of federal, provincial, and municipal permits are required prior to the commencement of construction. Consultation with regulatory agencies is required to confirm permit requirements. There are no existing permits for the Project and no permits have been applied for at this time.

Engagement

JX LNG is dedicated to initiating early and open engagement with effected Indigenous groups, public stakeholders, municipalities, federal and provincial governments, and government agencies. JX LNG's primary objective for engagement on the Project is to keep the groups mentioned above and other concerned parties informed about the Project. Their goal is to make project-related information easily accessible to all and encourage feedback throughout the duration of the Project. To ensure successful engagement, JX LNG intends to consult with each Indigenous Group on their preferred engagement methods, which may include policies, protocols, and traditional approaches. JX LNG also intends to foster effective and meaningful collaborations with public stakeholders, municipalities, federal and provincial governments, and government agencies. These engagements will follow and be in liaison with the First Nations Leadership Council's (FNLC) climate strategy and action plan and the Early Engagement Policy (EAO 2019).

The following is a list of identified Indigenous nations that will be involved in engagement for the Project:

- Lheidli-T'enneh First Nation – Gbenga Ayansola
- McLeod Lake Indian Band
- Nazko First Nation
- West Moberly First Nations
- Nak'azdli Whut'en
- Metis Nation of British Columbia
- British Columbia Metis Federation

Below is a list of identified jurisdiction stakeholders involved in engagement for the Project:

- BCEAO – Fern Stockman / Brennan Hutchison
- BCER – Marc Chawrun
- Federal IAA – Andrea Raska / Nicola Cook
- Regional District of Fraser Fort Geroge (RDFFG) – mayor and council
- City of Prince George – mayor and council
- CN Rail – Alexandre Shaughnessy/ Brittany Sciangola/Linda Vergata/Lyndon Jacak
- BC Hydro – Glen Thompson/Alison Wilson/Zach Osman
- Agricultural Land Commission (ALC) – Connor Newcombe
- Enbridge Pipeline – Mattew Wilpert
- Prince Rupert Port Authority (PRPA) – Michael Inman
- Ministry of Energy, Mines and Low Carbon Innovation (BC MoEMLI) – Mark Urwin
- Ministry of Forest (BC MoF)
- Ministry of Land, Water, and Resource Stewardship (BC MoLWR)
- Ministry of Jobs, Economic Development, and Innovation
- Ministry of Municipal Affairs
- Ministry of Transportation and Infrastructure (BC MoTI) – Shaun Holaham
- Fisheries and Oceans Canada (DFO) (potentially) – Tessa Richardson

The list below is the initial list of potential public stakeholders and groups to be consulted with after submission of the final IPD and EEP. These groups have been identified and included because of their known or anticipated interest in the Project, and/or anticipated effects of the Project.

- Northern Health Authority (NHA)
- RCMP – Prince George Detachment
- Prince George Fire Department
- Prince George Airport Authority
- Goodsir Nature Park
- Salmon Valley Community Association
- Summit Lake Community Association
- Willow River Recreation Association
- University of Northern BC (UNBC)
- College of Caledonia
- Prince Geroge Community College
- Summit Log Corporation

- Prince George Natural Resource District
- District Manager Prince George
- BC Rail
- The Wright Investment Company Limited
- Saunders Falling Ltd.
- Province of BC
- Summit LNG Corporation
- Ainsworth Lumber Co Ltd.
- Point Creek Contracting
- Ministry of Transportation
- Nearby outfitters and trappers
- Nearby Freehold landowners
- Local Forestry Road user groups (FSR)

Indigenous Nations

A review of the Consultative Areas Database (CAD) has identified one Indigenous Group who's established or asserted traditional territories overlap with the Project. The Lheidli-T'enneh First Nation (LTN) is located approximately 20 km from the proposed Project site. JX LNG is committed to working with First Nations on the development of the Project and understanding Indigenous knowledge that is pertinent to the Project, through all phases from design to reclamation.

Potential interactions with and effects on Indigenous interests associated with the Project components and activities include, but are not limited to:

- Effects on traditional practices including hunting, trapping, fishing, and plant gathering.
- Effects on access to traditionally harvested resources.
- Effects on access to traditional land use sites.
- Effects on cultural transmission and experience.
- Opportunity for training and employment.
- Opportunity for business.

From biophysical impact standpoints, communication with Indigenous groups have taken place and some concerns were expressed:

- Lheidli-T'enneh First Nation (LTN) has expressed concern about culminative effects and potential impacts on/to traditional practices/use.
- Nazko First Nation (Nazko) has expressed concern surrounding the Fraser River Watershed regarding potential spills, water contamination, or water diversion. The Project's location within this watershed could potentially impact the water quality, quantity, and aquatic environment, including but not limited to fisheries, species at risk and biodiversity.
- Nak'azdli Whut'en (Nak'azdli) would like to ensure that waterways are protected during the construction and operation of the Project. Salmon are very important traditionally to the Nak'azdli community and the current fish stock population is already in decline. Nak'azdli has an environmental stewardship plan that they would like to be incorporated into the EA where

possible. Once the Environmental reporting is completed for the Project Nak'azdli would like the opportunity to review and provide comments.

JX LNG has reached out to the LTN for a list of preferred contractors to help with the Environmental Assessments and Archaeology. The goal is to ensure that the LTN is a part of the EA process and that their concerns will be addressed. JX LNG has spoken to Nak'azdli regarding notification of any negative impacts on waterways and of any mitigation measures that may be required.

The McLeod Lake Indian Band, West Moberly First Nation, Metis Nation of British Columbia and British Columbia Metis Federation have not expressed any concerns around Biophysical Impacts at this time. JX LNG will continue to keep communication open and address any concerns that may arise further along in the process.

From socioeconomic impact standpoints, communication with Indigenous groups have taken place and the following comments were provided:

- The LTN and Nak'azdli have both expressed an interest in training opportunities for their communities so that they may becoming part of the work force long term.
- The McLeod Lake Indian Band (MLIB) is interested in working together on construction opportunities, and the Nak'azdli has a development corporation of small band-owned companies they would like to be utilized for the Project. Nak'azdli has also made JX LNG aware that they have office space available for rent in Prince George (1515 2nd Avenue Prince George).
- Nak'azdli has proposed an Impact Benefit Agreement that could provide long/short term corporate support to their community. They have suggested potential sponsorships including Hatchery funding, Cultural center, Administration Building, Youth camps/center, Museum and a Health unit. Nak'azdli also expressed concerns about increased cost to the Nak'azdli community due to the perceived increased draw on BC Hydro by the Project. JX LNG believes that the additional draw will not be sufficient to negatively impact the communities.

The Nazko, West Moberly First Nation, Metis Nation of British Columbia and British Columbia Metis Federation have not commented on the Socioeconomic Impacts at this time. JX LNG will continue to keep communication open and address any concerns on input that maybe raised further along in the process.

Biophysical Setting

The proposed environment for the project will occur on a greenfield site that is within the Nechako Lowland Ecosection. The area has a sub-boreal climate, which is typically humid in the summer due to moist Pacific air from the west coast, and intensely cold with high increments of snowfall during the winter. The Project is sited 3.5 km east of the Salmon River and 4.7 km west of the Fraser River. There are two tributaries located within the Project site, Tay Creek and one unnamed tributary. The Project will be designed to have no permanent impact to these streams.

The agricultural capability of the site is 20% Class 5 and 80% Class 7 with stoney soil deficiencies according to the Canada Land Inventory. There are some areas with varying degrees of grade change, however these changes in grade are minimal and take place over large distances. Most of the southern portion of the site

is not located within the Agricultural Land Reserve. The portion in the Agricultural Land Reserve has an active approval for non-farm use dated 2016 from the Regional District. In consultation with the Agricultural Land Commission, this approval is transferrable to JX LNG. Some of the sites are located within the Provincial Forest, which would require amendment during the Crown Land disposition process.

This site is accessed directly from Highway 97 or from the Salmon Valley Forest Service Road which bisects the area. The Forestry Road is well maintained and is in good condition year-round. The major 500KV BC Hydro line runs east of the property. The CN Rail Line passes along the west portion of the site at a grade which will make railway extension into the site relatively easy. The Integrated Land Management Bureau of the Province of BC has secured approval from the Agricultural Land Commission for a line extension into the potential industrial area. This site is located on a plateau, therefore, reduces the potential for inversions and calm air conditions to cause pollution to build up. Hart North is the best all round industrial site in the Prince George area.

Health, Social and Economic Context

As of the 2021 Canada Census, the RDFFG (Regional District of Fraser Fort-George – electoral area G) has a population 96,979 people, with most of the population concentrated in the Prince George Census Agglomeration (92.3%), which has a population of 89,490. Most residents within the RDFFG live in the City of Prince George (79.2%), which alone has a population of 76,708. Electoral area G of the RDFFG has a population of 365 people and 3,471 people live in electoral area A of RDFFG. The closest community to the Project is the community of Salmon Valley, located approximately 9 km south of the Project (54° 05′ 00″ N 122° 42′ 00″ W) and 20 km north of the city of Prince George. Salmon Valley is an unincorporated community with a rural population and limited resources. The area relies on Prince George as the economic center of the region.

Economic activities in the Prince George area are primarily centered on forestry, recreation, mining, oil and gas and recreational and subsistence hunting and fishing. The City of Prince George has historically developed from a mainly forest-based economy to an economy that has diversified across various sectors.

The Project area is located within one provincial administrative region, Region 7A – Omineca, consisting of multiple wildlife management units (WMU) for the purpose of game management. General open seasons in the Omineca region are available for numerous big game and mammal species as well as wild game birds. Waterbodies and watercourses located within the region support a recreational sport fishery.

Some of the socio-economic effects of the area are the following:

- Hunting, outfitting, and trapping occur within the regional WMU with opportunities (i.e., outfitting areas, trapping areas) available.
- Recreation and tourism are important industries in the region focused on the natural environment.
- Opportunities relate to various attractions, provincial parks and natural areas, regional parks, recreation and scenic values, and heritage sites.

Human health can be affected by the inhalation of air emissions from combustion sources and increases in noise levels. Human health may also be affected by altered changes to the quality and quantity of traditional foods and drinking water. Potential effects of the Project on human health will be identified and evaluated. Using best practices, JX LNG intends to address these potential effects and will conduct first person interviews with the residents in the nearby area to better understand the potential human health effect of the Project.

Project Benefits

The Project will provide socio-economic benefits to the province and to the local economy. These benefits include but are not limited to:

- Generate thousands of person-years of employment during the construction period.
- Generate hundreds of permanent, direct and contract positions during commercial operation.
- Generate a significant on-going economic benefit to the local community and local Indigenous groups.
- Training at local college and university institutions.
- Support services throughout construction and plant operations (food and lodging).
- Provide education and employment training for members of local Indigenous communities.
- Associated new business development opportunities.
- Stand as Canada's inaugural inland LNG endeavor, strategically positioned a mere 300 km from gas producing areas, the Project will increase the Canadian LNG export capacity to overseas markets, utilizing existing transportation infrastructure to transport gas to the coast.
- Provide LNG to support local emergency relief efforts within Canada, as well as remote sites lacking natural gas pipeline, leveraging the pre-existing railway and highway infrastructure.

As well, the Project will have environmental benefits including, but not limited to:

- Designed to "best in class" standards for environmental performance.
- Designed to minimize impacts to water sources and aquatic life by utilization of aerial coolers.
- Designed to minimize impacts to air emission by utilizing BC Hydro green electricity.
- By constructing the facility inland, the impacts associated with coastal environments and marine life can be avoided. Construction of a Jetty and shipping infrastructure is avoided.
- An existing zoned industrial site is proposed for the Project. This has the direct benefit of avoiding development into new and potentially environmentally sensitive areas.
- The use of modularized construction techniques will reduce equipment footprint and land use, in addition to minimizing construction timelines and impact due to heavy equipment movement in the area.
- Utilizing existing roads and transport infrastructure will reduce access to new land and impact to natural areas.

- As the LNG process is a refrigeration driven process, an installation at high latitudes will result in seasonally significant power savings which translates into lower overall power consumption for the plant. Thus, leaving green power on the grid for other demand.
- There is a future opportunity for local utilization of the produced LNG to displace other heavy hydrocarbon emitter fuel sources in the area.

Potential Effects of the Project

JX LNG is aware of the validity of the effects that may occur towards valued components throughout the various phases of the project and intends to identify them accordingly.

The project has the potential to affect fish and fish habitat as defined by the Fisheries Act – the harmful alteration, disruption, and destruction of fish habitat under the Project's aquatic areas. Some of these fish include Burbot, Chinook Salmon, Mountain Whitefish, rainbow trout, etc. The fish habitats would include water and sediment quality and quantity.

Similarly to fish and fish habitat, the Project has the potential to affect Aquatic species as defined by SARA (Species at Risk Act) – mortality or physical injury due to physical impact due to construction activities (e.g., by machinery or covering by sediment). Some of these aquatic species in fresh water include Buckbean / Peat-Mosses, Truncated Quillwort, Small White Waterlily, etc. Along with sediment quality and quantity.

The project also has the potential to affect migratory birds as defined by the Migratory Bird Convention Act, 1994. The affects are the following:

- Changes to migratory bird movement patterns due to an increase in traffic (via Railroads and highways).
- Loss or alteration of habitat due to the construction and operation of the Project.
- Increased risk of mortality due to the construction and operation of the Project.

Some examples of migratory birds that may be impacted include Hawks, Owls, Sandpipers, Falcons, Warblers, etc.

Emissions and Waste

The Project will comply with all provincial and federal regulatory requirements and guidelines when dealing with the variety of wastes, emissions, and effluents that it produces over its lifetime. An environmental management plan will be developed based on the outcome of the EA-IA and the requirements laid out in the permitting process.

The production of waste and emissions will occur during the construction of the site as well as during operation and decommission. Waste products and emissions are assumed to be very similar regarding construction and decommission considering the use of similar equipment required for set up and take down. Some of the toxic waste products include nitrogen oxides (NO_X), carbon monoxide (CO), particulate matter (PM), and volatile organic compounds (VOC) from vehicles, diesel-powered portable electricity generators (back up) and construction equipment emissions. GHG emissions of CO_2, methane (CH_4), and

nitrous oxide may also be emitted from construction equipment, and vehicle traffic. Used oils and solvents will be managed during construction in compliance with provincial hazardous waste management requirements. Operating waste may come in the form of paper, cardboard, cartridges, batteries, or domestic waste due to administrative/office/warehouse duties or as wood and scrap metal from maintenance duties. The operation of the site will lead to the production of sanitary wastewater which will be stored and trucked off site accordingly. Additionally, small amounts of Propane, Butane, and Condensate will be produced as by-products. These will be captured, stored, and sold as separate commodities.

The GHG emissions produced by the Project will be limited due to power being supplied by the BC Hydro transmission system. The Project does have a CO_2 stream that is produced. JX LNG is evaluating options for this stream including but not limited to carbon sequestration and storage, sale as a byproduct and venting with appropriate carbon offsets to neutralize the Project. It is estimated that the total amount of CO_2 emissions for the full Project build out (both Phases) will be approximately 99,669 tonnes CO_2e per year. A thorough breakdown of the GHG estimates is in Appendix C.

Alternatives

Current alternatives for review include site location/selection, power supply, pipeline options, technology/equipment selection, construction processes and management of operations. The best available technology for the maximization of operational efficiencies and the reduction of Project emissions will be assessed. This will be balanced with Project cost economics and mitigating Project risks and uncertainties. The assessment of these alternatives will be informed by engagement with local Indigenous communities, regulators, and the public.

Current major Project decisions include:

- Fresh Water vs. Air Cooling
- Electric vs. Gas Drive Equipment
- Plant Siting
- Pipeline and Powerline Routing

There are currently no alternatives to the Project at this time that would contribute towards the three major objectives of this project, which are:

- Enable the export of rich natural gas deposits of the Western Canadian Sedimentary Basin (WCSB) to serve the growing demand for natural gas across the globe.
- Create direct and indirect benefits for Indigenous parties involved and overall citizens of BC and Alberta.
- Assist all parties involved in meeting objectives to address global climate change due to GHG emissions.

Conclusion

This Executive Summary highlights key aspects of the JX LNG Canada - Summit Lake PG LNG Project. The Project will be developed in a manner consistent with the environmental goals of BC, Canada, all stakeholders involved while respecting Indigenous values and rights. The Project will create significant benefits in Canada and produce global environmental benefits as the world transitions to a low carbon energy economy.